

**Meeting of the Central Valley Flood Protection Board
March 27, 2009
Staff Report**

Item: Consider approval of the Central Valley Flood System Improvement Framework developed by the California Levees Roundtable. The Framework will be submitted to the U.S. Army Corps of Engineers to demonstrate that system-wide improvements are underway and to request temporary extension of PL 84-99 rehabilitation eligibility.

Location: California's Central Valley

Description: The California Levees Roundtable, a collaborative partnership of federal, State, and local officials, has developed a framework for the improvement of the State-federal levee system in the Central Valley. The State is already aggressively pursuing flood system improvements over the next 25 years to improve public safety. The purpose of the Framework is to document the many ongoing and planned system improvements, set aggressive milestones that can be used to track progress, protect and conserve riparian habitat values, and demonstrate a commitment to flood system improvement that allows California to maintain eligibility for federal rehabilitation aid for levees under Public Law 84-99 while improvements are implemented in the long-term.

The Framework, including its interim criteria for vegetation management, will be particularly useful during the next few years while the Central Valley Flood Protection Plan (CVFPP) is being developed. The CVFPP is a system-wide strategic plan for flood risk reduction in the Central Valley, and is scheduled to be completed and adopted by the State by July 2012. Levee erosion, channel capacity, seepage, encroachments, vegetation maintenance, structural instability, seismic loadings, and environmental concerns are all important factors that must be considered to improve system reliability.

Vegetation growing on levees may restrict the ability to detect defects and distress and may also impair flood-fight activities during a flood event. There are also concerns that decaying tree roots or upturned root balls from fallen trees can lead to levee failures. However, depending on management techniques, waterside vegetation can provide important erosion protection for floodplains and levees. Riparian vegetation provides habitat important to many species of fish and wildlife, including some protected by State and federal laws, and provides important recreational and cultural benefits.

The U.S. Army Corps of Engineers has national standards that limit vegetation on levees. As an interim step in meeting these national standards, the Department of Water Resources prepared interim levee vegetation management criteria for trimming and thinning of vegetation for use until 2012. In the long-term, the State will seek to conserve and enhance riparian habitat on the waterside of levees and aggressively pursue compliance with the national levee standards through the use of improved maintenance inspections, phased vegetation management practices,

regional variances, and other management tools that would be consistent with a multi-species and floodplain conservation strategy for the ecosystem.

The U.S. Army Corps of Engineers has agreed that the flood system will be allowed to remain "active" in the PL 84-99 program and will continue to receive federal levee rehabilitation assistance in the event of a flood if the State is demonstrating positive progress and meeting the milestones outlined in the Framework. This eligibility shall be reviewed annually for renewal in accordance with Corps policy and remain in effect until 2012, at which time the eligibility criteria will be reconsidered based on the contents of the CVFPP and the results of research into the long-term effects of vegetation on levee integrity.

The Framework is a living document – a work in progress – that provides general guidance for helping the State move forward while the system-wide CVFPP is being developed. The participating agencies recognize that many of the specifics needed for this framework have to be worked out together during the next four years, including the necessary environmental permitting associated with specific actions or programs. Therefore, details in the document should be viewed as supporting a good-faith effort to make progress in the interest of public safety improvements over time.

The California Levees Roundtable is comprised of senior level officials representing the U.S. Army Corps of Engineers (Headquarters, South Pacific Division, and Sacramento District); National Marine Fisheries Service, U.S. Fish and Wildlife Service, Federal Emergency Management Agency, Central Valley Flood Protection Board, Department of Water Resources, Department of Fish and Game, Reclamation District No. 2068, and the Sacramento Area Flood Control Agency. These agencies have agreed to continue collaboratively working together as partners in upcoming years during implementation of this Framework and the CVFPP to improve public safety and environmental sustainability.

The Roundtable understands and reminds everyone that no matter how much the levee system is improved, people who build and live behind levees will always have substantial residual risk of flooding.

Staff Recommendation:

1. Staff recommends that the Board approve the California's Central Valley Flood System Improvement Framework developed by the California Levees Roundtable.
2. Staff recommends that the Board direct its Executive Officer in collaboration with the Department of Water Resources to submit the Framework Document on behalf of the State, to the U.S. Army Corps of Engineers demonstrating, the many ongoing and planned system-wide improvements and seek temporary extension of P.L. 84-99 eligibility based on the U.S Army Corps of Engineer's Director of Civil Works January 9, 2009 memorandum (copy attached).

Attachments

1. Summary of the Framework Document
2. Director of Civil Works January 9, 2009 memo

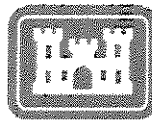
Other Resources

1. "California's Central Valley Flood Improvement Framework" available at:<http://www.cvfpb.ca.gov/>

California Levees Roundtable



FEMA



US Army Corps
of Engineers

SAFCA

Sacramento
Area Flood
Control
Agency



California's Central Valley Flood System Improvement Framework

Summary

This document has been collaboratively developed by the California Levees Roundtable, a partnership of federal, State, and local agencies that was formed in August 2007 to address vegetation issues affecting the State-federal levee system in the Central Valley. The Roundtable recognized that vegetation management is only one of many issues that threaten levees and broadened its scope to address many threats to levee integrity. The flood system improvement process requires a comprehensive approach to improve public safety that focuses first on the most critical areas affecting public safety.

Purpose

The primary purpose of this document is to present a short-term Framework for flood system improvements that are already underway or will be initiated before a comprehensive plan is ready in 2012. The Framework should be viewed as a living document – a work in progress – that provides general guidelines for helping the State, in coordination with federal and local entities, move forward while the comprehensive plan is being developed. The participating agencies recognize that many of the specifics needed for this Framework have to be collaboratively resolved during the next four years and are committed to continue working together during implementation of the Framework. Therefore, details in this document should be viewed as supporting a good-faith effort to make progress in the interest of public safety improvements over time while establishing milestones to track progress toward reaching the goals of the Framework.

Short-term Framework

California's flood system has over 1,600 miles of State-federal project levees in the Central Valley. Trees and brush grow on most of these levees and provide an important remnant of the riparian forest that once lined the Sacramento and San Joaquin rivers and tributaries. This vegetation may also impair levee performance. Other threats such as inadequate channel capacity, erosion of levees, seepage through and under levees, encroachments on the levee from adjoining properties, structural instability of the levee section, and seismic loadings also contribute to the threat of flooding. California needs to look comprehensively at these threats in its flood management planning.

Ongoing activities in the short-term Framework are focused on addressing these threats in order to improve public safety in flood-prone areas. However, no single threat should be given priority in the short-term. The system improvement process will use scientific data collection and technical analyses to help guide improvement priorities and resource allocation within State, federal, and local funding capabilities.

Elements of the short-term Framework include:

- **Inspections** – The California Department of Water Resources (DWR), the Corps of Engineers (Corps), and local levee maintaining agencies (LMAs) have recently developed improved levee inspection processes and will continue to improve levee inspections.
- **Enforcement** – To ensure that identified levee deficiencies are addressed, DWR, the Central Valley Flood Protection Board (CVFPB) and the Corps will use enforcement actions where necessary.
- **Maintenance** – State and local maintaining agencies will continue to maintain levees in accordance with the Corps' operations and maintenance (O&M) manuals.
- **Early Implementation Projects** – There is an identified need, especially in urban areas in deep floodplains, to proceed with some high priority flood improvement projects before a comprehensive plan is ready for implementation. An element of approval for these projects ensures that they do not eliminate opportunities or prejudice flood risk reduction alternatives that would provide regional or system-wide benefits.
- **Emergency Response** – Emergency response during the short-term will include mapping of flood prone areas and development of emergency response programs along river corridors and in the Delta. Many of the emergency response activities provide for improved flood system operations during floods.
- **Public Outreach** – The State has been actively pursuing a course of public outreach and stakeholder involvement since the inception of the FloodSAFE California initiative, following approval of Propositions 84 and 1E by California voters in November 2006.
- **Data Collection** – Data collection is the key to understanding existing conditions and identifying needed system changes. Much of this data will feed into the Central Valley Flood Protection Plan (CVFPP), the long-term comprehensive plan for the Central Valley flood system.
- **Program Planning** – State, federal, and local partners will continue program planning during the interim period. Much of this work will help to define the detailed, long-term flood management improvement process in the CVFPP.
- **Feasibility Studies** – DWR, the Corps, and local partners will continue to work on site-specific feasibility projects that will ultimately result in construction of critically needed flood risk reduction projects.
- **Ongoing Flood Protection Projects** – DWR, the Corps, and local partners will continue to work on implementation of site-specific projects as they become ready for construction.
- **Research** – Peer reviewed scientific research will be conducted to support development of a technically defensible vegetation management policy in

support of California's FloodSAFE initiative. Research will consider both beneficial and harmful impacts of levee vegetation on Central Valley levees. The State acknowledges that the Corps is not likely to make substantial changes to its national guidance on vegetation standards, but expects that scientific research, as well as long-term evaluation and monitoring of vegetation life cycles with respect to performance of project levees in the Central Valley, will support granting of regional variances to the national standards for the Sacramento and San Joaquin levee systems. In addition, research is expected to identify appropriate engineering actions from a risk perspective to mitigate leaving select vegetation on levees.

- **Environmental Considerations** – Mitigation of environmental effects of flood system improvements as well as habitat enhancements implemented as part of multi-objective projects will be part of the environmental considerations for the system. Development and implementation of a Multi-species and Floodplain Conservation Strategy, including a conservation banking program, will guide this effort.
- **Coordination** – State and federal agencies are working together on several fronts to address levee vegetation management and the broader problems with California's levees.
- **Issues to Resolve** – Many of the specifics needed for this Framework have to be resolved together during the next four years as implementation progresses. Among many issues to resolve, participating agencies need to work on a vision to strategically address the need for environmental protection and public safety at the same time.
- **Implementation Roles** – Implementation of the Framework requires continued work of State, federal, and local agencies. This section summarizes what can be expected of various agencies. DWR, in collaboration with the CVFPB, is taking a leadership role for the majority of actions identified in the Framework, but the Corps will be an active partner throughout the process. DWR and the Corps will coordinate with the environmental resource agencies during planning and project development to determine how to avoid, minimize and mitigate impacts, and to identify opportunities for ecosystem restoration and enhancement as integral components to flood system improvements. LMAs will continue to improve their operation and maintenance activities for levees under their responsibility.

Measured Progress

The State is currently engaged in an aggressive 25-year program, the FloodSAFE initiative, to upgrade its flood management system. The CVFPP, scheduled for beginning implementation in 2012, will lay out strategies for implementing comprehensive system-wide improvements. It is important to California to maintain Public Law 84-99¹ (PL 84-99) eligibility for its levees while

¹ PL 84-99 defines federal rehabilitation assistance for flood control works

system improvements are underway. The Corps has agreed that the flood system will be allowed to remain “active” in the PL 84-99 program and will continue to receive federal levee rehabilitation assistance in the event of a flood if the State is demonstrating positive progress and meeting the milestones in achieving the Framework’s short-term goals and maintenance objectives. This PL 84-99 eligibility shall be reviewed annually for renewal in accordance with Corps policy and remain in effect until 2012, at which time the eligibility criteria will be reconsidered based on the contents of the CVFPP.

Positive progress can be measured against many expected dates and other milestones identified for implementation over about the next four years in the short-term Framework. One important milestone is the requirement for LMAs to maintain levee vegetation according to DWR’s Interim Levee Inspection Criteria for Vegetation, first implemented for the Fall 2007 inspections (see adjacent box). The inspection criteria are aimed at improving public safety by providing visibility for inspections, eliminating vegetation conflicts and encroachments that could hamper flood fight activities, and improving access for overall maintenance and flood fights.

The State will require LMAs responsible for maintenance of State-federal project levees in the Central Valley to be in compliance with the interim vegetation requirements by November 1, 2010. The State will further require that LMAs report status of compliance by November 1, 2009, and (for any levees for which the LMAs do not expect full compliance during 2010) to provide levee location, justification for non-compliance, and plans/schedules for complying with the interim requirements. Landscape encroachment vegetation from adjoining properties will be handled as part of the long-term flood improvement plan along with other encroachments. In the event LMAs are not making acceptable progress, and/or the State begins the maintenance area formation process, the Corps will consider this action when evaluating whether to grant extensions relative to PL 84-99 eligibility.

Progress in implementing interim vegetation requirements and other Framework milestones will be reviewed annually by the Corps and DWR to assess progress in complying with the milestones. The review will also address those areas of the system where compliance with the milestones may be delayed due to technical, economic, or environmental factors.

LMAs made significant progress during 2008 – the first “maintenance year” since DWR revised the interim vegetation criteria in the Fall of 2007. It is projected that substantial compliance with interim criteria will be achieved by Fall 2010. There

**DWR’s Interim Levee Vegetation
Inspection Criteria (Fall 2007)**

Trees must be trimmed up five feet above the ground (12 feet above the crown road) and thinned enough for visibility and access. Brush, weeds, or other vegetation over 12 inches high blocking visibility and access within these levee areas should be trimmed, thinned, mowed, burned, dragged, or otherwise removed in an allowed manner. These criteria apply on the entire landside slope plus a 10-foot wide easement beyond the landside toe. On the waterside, these criteria apply to vegetation on only the top 20 feet (slope length) of the levee slope.

Note: These visibility and accessibility criteria do not meet federal standards (see box on next page), but do provide for measurable progress in the short-term.

may be levees in some areas where it is not feasible to meet the Corps' vegetation standards and those segments of the flood protection system could lose eligibility for PL 84-99.

The State plans to develop a Multi-Species and Floodplain Conservation Strategy that will allow for levee maintenance and levee improvements while conserving and/or enhancing vital habitat and ecosystems which coexist with the flood protection system. Implementation of any flood improvement actions would be subject to State and federal environmental laws.

In the long-term, the State will seek to conserve and enhance riparian habitat on the waterside of levees and aggressively pursue compliance with the Corps' national levee standards including vegetation standards through the use of improved maintenance inspections, phased vegetation management practices, regional variances, and other management tools that would be consistent with the Multi-Species and Floodplain Conservation Strategy.

New levee sections will comply with the Corps' levee vegetation standards. Major modifications of existing levee sections will comply with the Corps' levee vegetation standards, but may allow vegetation to remain if these projects can demonstrate that the public safety risks posed to levee integrity have been adequately addressed and engineered into project designs. The Corps' levee standards may evolve over time, when appropriate, to incorporate the latest developments in science and engineering.

The State recognizes that the Corps' national standard for levees, as embodied in draft Engineering Technical Letter 1110-2-571, is an appropriately conservative national public safety standard, and is likely achievable for most of the federally authorized levees across the country. Some parts of the State-federal flood protection system in California's Central Valley currently meet the ETL standards for vegetation, and the State will enforce the standards in those areas into the future. New levees being added to the system (such as setback levees, backup levees, and ring levees) will also be designed, constructed, and maintained to ETL Standards. However, as described in this Framework document, the "legacy levees" built immediately adjacent to California's major riverine systems present unique challenges that will likely require regional variances or other engineered alternatives. Vegetation management on levees will be addressed by collaboratively transitioning from interim criteria towards the Corps' national standards within the context of many levee risk factors. This will be accomplished by federal, State and local agencies as part of development of the Central Valley Flood Protection Plan and its implementation after 2012.

Corps of Engineers Levee Vegetation Standards

Corps Engineering Technical Letter (ETL) 1110-571 and the Levee Owners Manual provide guidelines for landscape plantings and vegetation management on levees, floodwalls, embankments dams and appurtenant structures. These standards limit uncontrolled vegetation growth (brush, weeds, or trees) to smaller than two inches in diameter. However, the guidelines allow for designs or treatments that provide for levee vegetation. In addition, regional variances can allow vegetation on some levees.

Continued Collaboration

State and local agencies will work closely with the Corps and other federal agencies during the process of developing and implementing California's FloodSAFE initiative. This will include preparation of the system-wide CVFPP and long-term implementation of individual projects and programs to appropriately bring levees into compliance with Corps' standards including vegetation management and resolution of non-permitted encroachments. California expects the federal government and local agencies to partner and actively seek funding to cost share ongoing and future levee improvements.

The participating agencies are committed to broad based stakeholder collaboration to develop flood system improvements that effectively address critical stakeholder needs associated with public safety and the environment. Actions selected for implementation must ensure system operational performance in a time of changing climatic conditions, facilitate annual routine maintenance as well as periodic special maintenance, and protect and enhance the environment. This approach will require improved stakeholder interactions to help implement measurable system improvements.

Since the short-term Framework provides general guidelines, many specifics needed for this Framework have to be resolved during the next four years as implementation progresses. Following is a partial list of recommended actions that will be addressed through interagency collaboration.

- Define standardized maintenance processes and responsibilities of levee maintaining agencies
- Clearly identify all applicable environmental law requirements that must be met when dealing with short- and long-term actions identified in this document
- Work on authorized and unauthorized encroachments, including processes for identification and enforcement
- Define how the State will facilitate opportunities for local agencies to cost-effectively mitigate impacts of their levee maintenance
- Work with local agencies to help them achieve stable and sustainable funding for maintenance activities
- Work on levee certification issues
- Work on a statewide vision to concurrently address the need for environmental protection and public safety
- Clarify CVFPB role in enforcement of maintenance standards and in defining flood system improvement impacts and associated mitigations
- Develop stable funding mechanisms at State, federal, and the local level
- Develop programmatic approaches for environmental compliance

- Clearly define ESA consultation or permitting alternatives and agree on a direction and solution
- Develop and implement the Multi-Species and Floodplain Conservation Strategy
- Implement meaningful mitigation and conservation actions for interim vegetation management actions
- Annually review progress on implementing interim vegetation criteria and other Framework milestones and work on approaches to advance milestones delayed by technical, financial, or economic factors
- Develop the long-term comprehensive flood improvement plan in the CVFPP by 2012



DEPARTMENT OF THE ARMY

U.S. Army Corps of Engineers
WASHINGTON, D.C. 20314-1000

REPLY TO
ATTENTION OF:

JAN 9 2009

CECW-HS

MEMORANDUM FOR Commanders, Major Subordinate Commands and Districts

SUBJECT: Temporary extension of P.L. 84-99 Rehabilitation Eligibility for Non-Federal Sponsors Implementing System-wide Improvements

1. References

- a. ER 500-1-1, Emergency Employment of Army and Other Resources – Civil Emergency Management Program, 30 Sep 2001.
 - b. Memorandum, HQ USACE (CECW-HS), 18 Jan 2007, subject: Supplemental Policy Guidance for the USACE 26 September 2006 Policy Guidance for Prioritization of FY07 Inspection of Completed Works (ICW), Operations and Maintenance (O&M), General (O&M), Mississippi River and Tributaries (MR&T), and Flood Control & Coastal Emergencies (FCCE) Inspection Accounts.
 - c. Memorandum, HQ USACE (CECW-HS), 12 Jun 2007, subject: Interim Vegetation Guidance for Control of Vegetation on Levees.
 - d. Memorandum, HQ USACE (CECW-HS), 16 Nov 2007, subject: Levee Safety Program Implementation.
 - e. Draft Engineering Technical Letter (ETL) 1110-2-571, Guidelines for Landscape Planting and Vegetation Management at Levees, Floodwalls, Embankment Dams, and Appurtenant Structures, 3 Apr 2008, or as revised into final issuance.
2. The purpose of this memorandum is to provide guidance for requesting a temporary extension of eligibility to allow flood damage reduction systems that have received an unacceptable inspection rating to remain eligible for rehabilitation assistance while non-federal sponsors are undertaking system-wide corrections of deficiencies and/or implementing system-wide improvements. The intent of this memorandum is to optimize flood risk reduction between operation and maintenance work and system-wide improvements, for the benefit of the public exposed to flood risks.
3. Public Law (P.L.) 84-99 authorizes rehabilitation assistance to repair eligible flood damage reduction systems that are damaged by flood. Rehabilitation assistance is available to those systems that are being properly operated and maintained by non-federal sponsors. As a matter of policy, outlined in ER 500-1-1, flood damage reduction systems that receive an unacceptable inspection rating are not eligible for future rehabilitation assistance until the unacceptable maintenance deficiencies have been corrected. However, application of this policy does not take into consideration cases where the non-federal sponsor is undertaking system-wide corrections of deficiencies and/or implementing system-wide improvements intended to address structural and

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Implementing System-wide Improvements

other deficiencies that could pose a greater risk to public safety than a maintenance deficiency identified during a system inspection. In these cases, it may be appropriate to correct the maintenance deficiencies as part of a more comprehensive system-wide improvement effort being implemented by the non-federal sponsor.

4. An extension of eligibility for future rehabilitation assistance while correcting maintenance deficiencies as part of the system-wide improvement effort must be requested by the non-federal sponsor. The following criteria will be used to evaluate the request:

a. The request must identify the system-wide deficiencies or improvements being addressed by the sponsor's system-wide improvement plan and demonstrate that implementation of the system-wide improvements provide significantly greater risk reduction as compared to simply correcting unacceptable maintenance deficiencies.

b. The request must summarize the activities being taken that demonstrate the sponsor is proceeding with the system-wide improvements. Examples of these activities are summarized below. Activities 1 through 3 are required activities for consideration of an eligibility extension.

(1) Sponsor has developed and is implementing a system-wide improvement plan.

(2) Significant non-federal resources have been committed for the improvement plan.

(3) Planning, design or construction activities have commenced.

(4) An emergency has been declared by the State during the non-flood season that has established the system improvements as a priority.

(5) State or local legislation has been enacted that significantly improve risk management efforts and resources.

c. The request must identify any unique conditions not within the control of the sponsor or maintaining agency that prevents them from meeting acceptable maintenance standards in a timely manner, such as:

(1) Endangered Species Act consultation is ongoing and resource agencies concur with the sponsor's proposed system-wide improvement plan.

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(2) The system was constructed without the use of engineered design standards or techniques and has structural deficiencies that the system-wide improvements are intended to correct.

5. As a condition of approving the request for an eligibility extension the non-federal sponsor's system-wide improvement plan must identify the following actions:

a. Plans for correction of maintenance deficiencies will be implemented in accordance with existing US Army Corps of Engineers (USACE) standards as part of the system-wide improvements.

b. Interim maintenance standards that will be implemented during the time that system-wide improvements are being implemented and, the eligibility extension is in effect.

c. Milestones that will be used to measure progress in implementing the system-wide improvements and determine continued eligibility for rehabilitation assistance during the eligibility extension period.

d. Interim flood risk reduction measures including a risk communication plan for those who are or will be receiving protection from the system-wide improvements.

e. For those levee systems shown as accredited on the Federal Emergency Management Agency (FEMA) Flood Insurance Rate Map (FIRM) and are part of the system-wide improvement plan, it shall be demonstrated that FEMA has been informed that these levee systems are deficiently maintained for purposes of the PL84-99 program and are being improved.

6. Approval authority for eligibility extensions will be the USACE Director of Civil Works (DCW). District Commanders shall evaluate the sponsors request for an extension based on the criteria outlined in paragraphs 4 and 5 above and provide a recommendation through the Major Subordinate Commander to the DCW. The District and MSC Commanders shall coordinate these requests with their Levee Safety Officers for technical input.

7. Approved eligibility extensions will be provided for a one year period. The sponsor's progress in implementing their system-wide improvement plan will be reviewed annually and renewal of the extension, if required, will be determined based on the sponsor's progress in implementing their system-wide improvement plan. Renewal of extensions shall not exceed four years (initial one year approval plus three consecutively approved annual extensions). Requests for renewals must follow the same process as the initial request, in addition to providing documentation of the sponsor's progress of items in paragraph 5 during the previous year.

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8. During implementation of the system-wide improvement plan, systems that have been given an eligibility extension will continue to be inspected by USACE and will be rated and the results communicated in accordance with existing inspection standards. Deficiencies identified from these inspections should be incorporated into the system-wide corrective actions and improvements as appropriate.
9. The non-federal sponsor's system-wide improvement plan may include flood damage reduction projects that are being evaluated for design deficiencies or other project improvements being undertaken by the USACE under specific project/program authority. However, any improvements implemented must be in accordance with existing USACE standards. A basis for the extension may not be related to delays associated with Congressional authorizations and appropriations for USACE actions and decisions.
10. The point of contact for this action is Ms. Germaine Hofbauer (202) 761-4970.



STEVEN L. STOCKTON, P.E.
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